

WHAT IS CLAIMED IS:

1. An evaluation system for vehicle operating conditions, comprising:
 - an automatic control device which sets target vehicle operating conditions and controls the vehicle so as to achieve the target operating conditions;
 - a controller that functions to:
 - determine whether an operation that worsens fuel economy has been performed based on the operating conditions of the vehicle;
 - determine the operating state of the automatic control device based on the operating conditions of the vehicle; and
 - compute an excess fuel consumption which is a fuel amount consumed in excess by the operation that worsens the fuel economy based on the operating conditions of the vehicle and the operating state of the automatic control device, and
 - a display device which displays the computed excess fuel consumption.
2. The system according to claim 1, wherein the controller further functions to:
 - compute an assumed fuel consumption based on the assumption that the operation that worsens the fuel economy has not been performed; and
 - subtract the assumed fuel consumption from an actual fuel consumption to compute the excess fuel consumption.
3. The system according to claim 2, wherein the automatic control device is a constant speed control device, and the controller further functions to

determine that the constant speed control device is operating when vehicle operating conditions have achieved predetermined operating conditions.

4. The system according to claim 3, wherein the constant speed control device has an output control device for an engine, and the controller further functions to:

determine an operating state of the output control device; and
calculate a fuel consumption ratio and the torque of the engine based on the operating state of the output control device, a rotational speed of the engine, and characteristics of the engine.

5. The system according to claim 4, wherein the controller further functions to:

compute the output of the engine from the torque and rotational speed of the engine; and

compute the fuel consumption by multiplying the fuel consumption ratio by the output of the engine.

6. The system according to claim 4, wherein the output control device is a device for controlling the fuel injection amount with an injection pulse, and the controller further functions to compute the fuel consumption ratio and the torque of the engine based on the rotational speed of the engine, the injection pulse width, and the characteristics of the engine.

7. The system according to claim 2, wherein the automatic control device is an automatic transmission comprising a torque converter, and the

controller further functions to detect the operating state of the automatic transmission based on an input/output rotational speed ratio, which is the ratio between a rotational speed of the engine and an output rotational speed of the torque converter.

8. The system according to claim 7, wherein the controller further functions to:

calculate a torque ratio and a power transmission efficiency of the torque converter from the input/output rotational speed and characteristics of the torque converter; and

compute the fuel amount consumed in excess by the slippage of the torque converter based on the torque ratio and the power transmission efficiency of the torque converter.

9. The system according to claim 8, wherein the controller further functions to:

compute a fuel consumption ratio and a torque of the engine based on the rotational speed of the engine, either one of an accelerator operation amount and a value equivalent to the accelerator operation amount, and characteristics of the engine;

compute an output of the engine from the torque and the rotational speed of the engine;

compute fuel consumption from the fuel consumption ratio and the output of the engine; and

compute the fuel amount consumed in excess by the slippage of the torque converter from the fuel consumption and the fuel amount that is

obtained by multiplying the fuel consumption ratio by the work ratio at which the vehicle runs against resistance.

10. The system according to claim 7, wherein the controller further functions to:

determine that the automatic transmission is in a lockup state when the actual rotational speed of the engine and the rotational speed of the engine calculated from the speed ratio and the rotational speed of the driving axle or driving wheel are equal to each other; and

when the automatic transmission is in a lockup state, compute the power transmission efficiency and the input/output rotational speed ratio of the torque converter to be both 1.

11. An evaluation method for operating conditions of a vehicle having an automatic control device which sets target vehicle operating conditions and controls the vehicle so as to achieve the target operating conditions, comprising:

determining whether an operation that worsens fuel economy has been performed based on the operating conditions of the vehicle;

determining the operating state of the automatic control device based on the operating conditions of the vehicle; and

computing an excess fuel consumption which is a fuel amount consumed in excess by the operation that worsens the fuel economy based on the operating conditions of the vehicle and the operating state of the automatic control device.